

A NEW SPECIES OF CUBOMEDUSAN (CUBOZOA: CNIDARIA) FROM NORTHERN AUSTRALIA

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ABSTRACT

A new species of cubozoan, *Tripedalia binata* is described from northern Australia. It is characterized by having undivided and paired pedalia.

KEYWORDS: *Cubozoa*, *Tripedalia*, new species, northern Australia:

INTRODUCTION

Some cubozoans are among the most venomous animals in the world. Although not all of these are considered lethal most can inflict severe stings and cause permanent cutaneous lesions. The discovery of another species, from a previously monotypic genus, is reported. The specific characters are distinctive and the medusa was found in sufficient numbers to discount the possibility that it merely represents a morphological variety of the previously known species *Tripedalia cystophora* Conant, 1897.

TOXICITY

The possibility that *Tripedalia* Conant might be venomous has not been discussed previously. Despite severe stings caused by other cubomedusans Miss S. Cunliffe (pers. comm.) observed no detectable sting when collecting *T. cystophora* from Grand Bahama in 1984 and Mr P. Alderslade (pers. comm.) noticed no effect when he applied tentacles of *T. binata* to the inner surface of his wrist. Conant (1897) mentioned however, that *T. cystophora* caught fish 'disproportionately large in comparison with its stomach'.

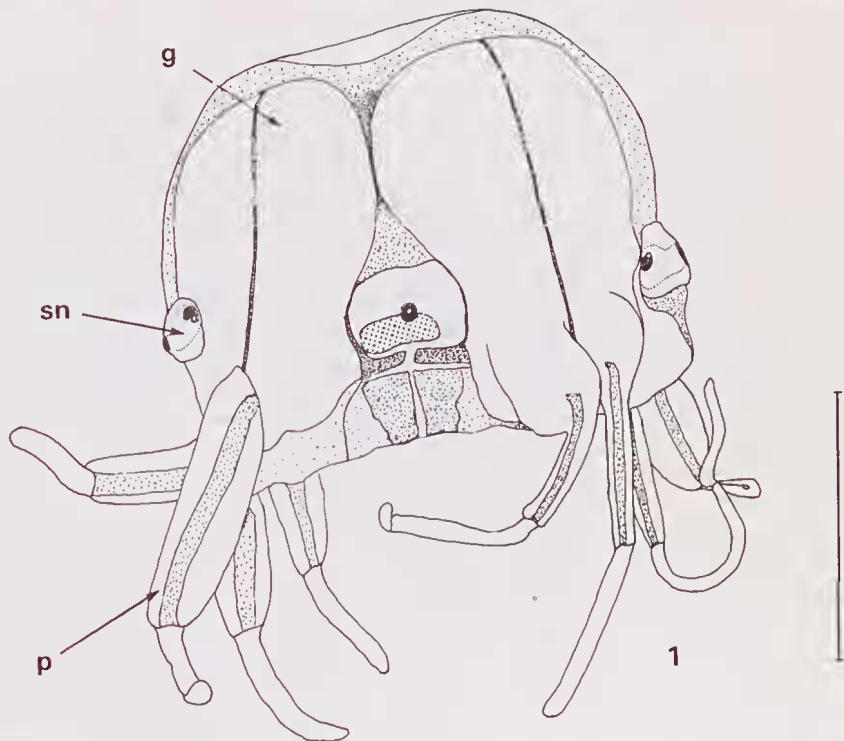


Fig. 1. *Tripedalia binata* holotype, lateral view showing gonads (g), pedalia (p) and sensory niches (sn). Scale line 7.0mm.

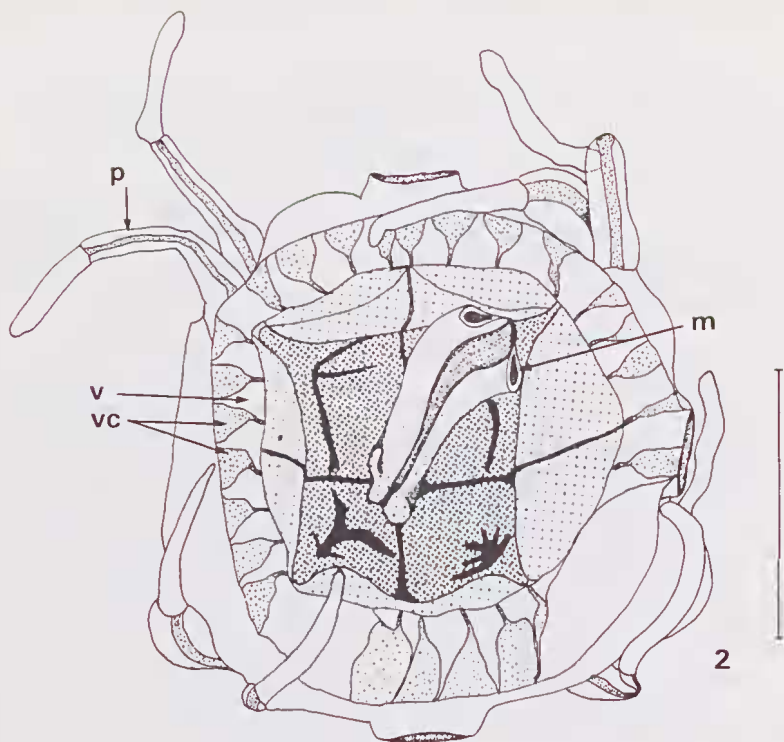


Fig. 2. *Tripedalia binata* holotype, subumbrellar view showing arrangement of mouth (m), pedalia (p), velum (v) and velar canals (vc). Scale line 7.0mm.

SYSTEMATICS

Tripedalia binata sp. nov. (Figs 1-5)

Type material. HOLOTYPE — NTM (Northern Territory Museum, Darwin) C5858, Elizabeth River, Northern Territory, 12° 35.5'S 130° 56'E, among mangroves during high tide at surface, March 1985, R. Hanley, R. Williams and P. Alderslade. PARATYPES — NTM C2944 a-i, 11 specimens, data as holotype; BMNH (British Museum (Natural History), London) no. 1987-10.26.2-11, 10 specimens, data as holotype; BMNH no. 1987-10.26.1, 1 specimen, Francis Bay, Darwin, Northern Territory, 12° 29'S 130° 52'E, at surface, 5 April 1983, J. Bowen.

Additional material. INDIA: 2 specimens, Jambu River, Orissa, at surface, 12 June 1901, N. Annandale, in BMNH.

Description. Pedalia in four interradial pairs with one tentacle per pedalium (Fig. 1). Bell flattened apically, covered sparsely with

small nematocyst warts (Fig. 3). Gonads on each radial canal, paired, extending from bell margin nearly to apex. Velum one fifth width of base of bell with 7-8 unpaired but short branching velar canals per quadrant (Fig. 4). Ocelli borne on short stalks in niches bordered by an orifice that extends slightly beyond bell margin (Figs 1 and 5). Stomach short, connected perradially to four small gastric saccules communicating with four perradial canals. Mouth cruciform, extending to base of bell (Fig. 2). Dimensions of holotype: 11.0mm from apex to velum, 14.5mm in diameter. Dimensions of paratypes: from 4mm bell height and 5mm bell diameter up to 11mm × 14.5mm.

Nematocysts: Ten-to-one ratio of stenoteles to atrichous isorhizas taken from tentacle squash samples. Atrichous isorhizas found in squash preparation of bell warts. Dimensions: stenoteles — 18-20 μm × 10-15 μm , most at upper end of size range; atrichous isorhizas — spherical diameter 12 μm . (Twenty of each measured).

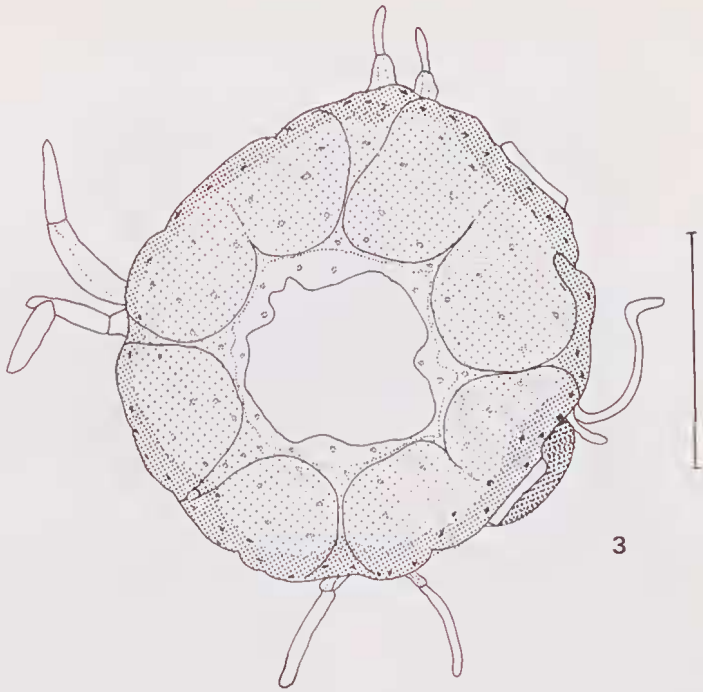


Fig. 3. *Tripedalia binata* holotype, apical view showing arrangement of nematocyst warts. Scale line 7.0mm.

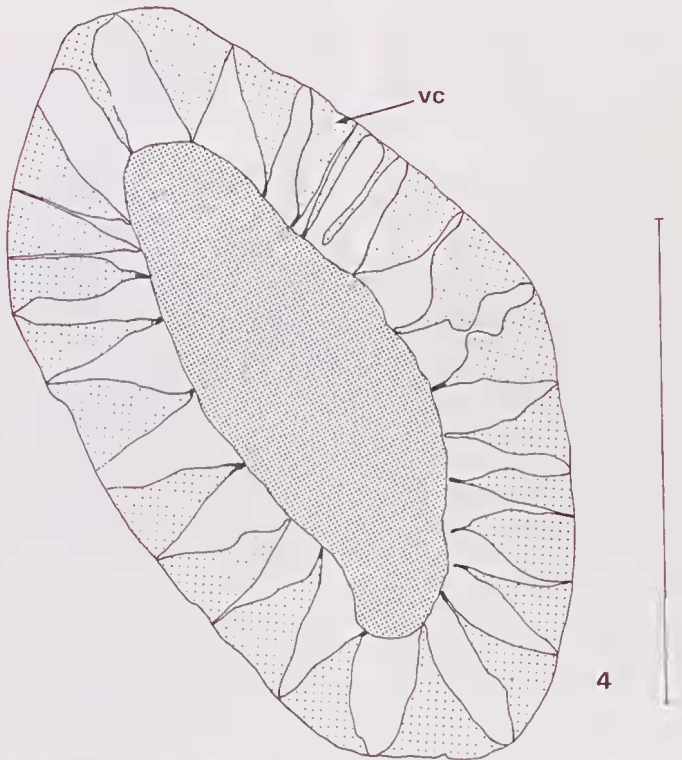


Fig. 4. *Tripedalia binata* paratype (from Francis Bay), subumbrellar view showing arrangement of velar canals (vc). Scale line 7.0mm.

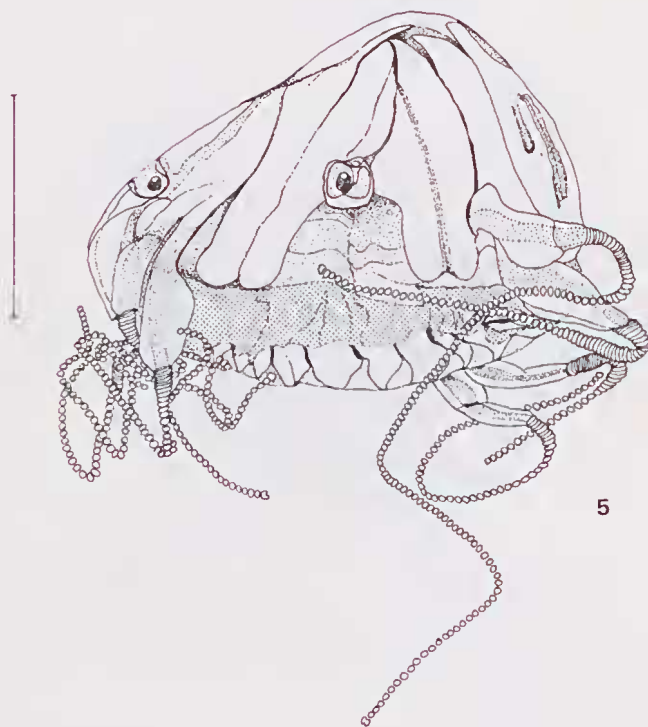


Fig. 5. *Tripedalia binata* paratype (from Francis Bay), lateral view showing tentacles partly extended. Scale line 7.0mm.

Remarks. The newly described species is referred to the family Carybdeidae due to the undivided condition of the pedalia (Kramp 1961). It is placed in the genus *Tripedalia* since it shares with *T. cystophora* Conant an interradial, grouped arrangement of separate and unbranched pedalia; and the size of the adult medusa, which is 3-4 times smaller than that of other cubozoans, is similar. The generic name *Tripedalia* is no longer appropriate since the newly described species, the second in the genus, differs from *T. cystophora* in the number of pedalia and tentacles which are paired and not in threes. In all samples examined these differences were constant in both species suggesting that *T. binata* is not a variation of *T. cystophora*.

Redefinition of Genus *Tripedalia* Conant, 1987. Carybdeidae with four interradial

groups of 2 or 3 unbranched pedalia, each bearing a single tentacle (*vide* Kramp 1961:307).

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